

ABSTRACT OF THE DISCLOSURE

A uPAR-targeting protein or peptide is diagnostically or therapeutically labeled and used in methods of diagnosis of therapy. The labeled protein or peptide preferably has the following properties: it comprises at least 38 amino acid residues, including residues 13-30 of the uPAR-binding site of uPA; competes with labeled DFP-uPA for binding to a cell or molecule that has a binding site for uPA, and has an IC_{50} value of about 10 nM or less; and is not a fusion protein wherein the uPA peptide is fused to another non-uPA protein or peptide. Preferred molecules are uPA, scuPA, tcuPA, an N-terminal fragment of uPA, residues 1-135, an N-terminal fragment of uPA, residues 1-143, an N-terminal fragment of uPA, residues 1-43; or an N-terminal fragment of uPA, residues 4-43. Detectable labels include a radionuclide, a PET-imageable agent, an MRI-imageable agent, a fluorescer, a fluorogen, a chromophore, a chromogen, a phosphorescer, a chemiluminescer or a bioluminescer. The disclosed methods are used to inhibit cell migration, cell invasion, cell proliferation or angiogenesis, or to induce apoptosis, preferably in the treatment of a subject having a disease or condition associated with undesired cell migration, invasion, proliferation or angiogenesis.